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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

CTS
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DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 23, the terms "spatial locality" and "temporal locality" are vague. In claim 23, the sentence "optimizing a measure of correlation between (a) spatial locality of storage of said network objects within said mass storage, and (b) temporal locality of retrieval of said network objects" is interpreted as optimizing a time it takes to locate the object in said cache memory.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 15-47 and 52-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhide et al., U. S. Patent No. 5,852,717.

As per claims 15, 23 and 39, Bhide teaches a method, including steps of:

a) receiving a set of network objects in response to a first request to an information provider (the server) from an information requester (the agent or the client) (column 8 line 5-8);

b) maintaining said network objects in a cache memory, said cache memory including mass storage (column 4 line 40-43 and column 6 line 27-29 and column 7 line 64-65 and column 8 line 13);

c) wherein said step of maintaining includes a step of minimizing a measure of latency for transferring network object between the client and the server (column 1 line 66 – column 2 line 2 and column 7 line 1-3 and 46-50).

As per claim 15c, although Bhide does not specifically state minimizing a measure of latency of displaying network objects, it would have been obvious Bhide's system is able to do so. It would have been obvious for Bhide's system is able to minimize a measure of latency of displaying network object because Bhide's state the system is able to reducing the overall time between the client and server (column 7 line 48-50). It means this would include the time for displaying the network object because in order for the client or the server to know the object is transferred successfully, a procedure of displaying the object on the monitor is essential. Therefore, one of

ordinary skill in the art would have realized Bhide's would be able to minimize a measure of latency of displaying network objects.

As per claim 23c and 39c, although Bhide does not specifically state optimizing (minimizing) a time it takes to locate the object in said cache memory, it would have been obvious Bhide's system is able to do so. It would have been obvious for Bhide's system is able to optimizing (minimizing) the time because Bhide's state the system is able to reducing the overall time between the client and server (column 7 line 48-50). It means this would include the time it takes to locate the object in said cache memory because locating the object in the cache is one of the major communication process between the client and the server. Thus optimizing the time for locating the object is an essential step for reducing the overall time. Therefore, one of ordinary skill in the art would have realized Bhide's would be able to optimize (minimizing) a time it takes to locate the object in said cache memory.

As per claim 31, Bhide teaches a method, including steps of:

a) receiving a set of network objects in response to a first request to an information provider (the server) from an information requester (the agent or the client) (column 8 line 5-8);

b) maintaining said network objects in a cache memory, said cache memory including mass storage (column 4 line 40-43 and column 6 line 27-29 and column 7 line 64-65 and column 8 line 13);

c) wherein said step of maintaining includes steps of determining when and where to record said network objects, in response to a measure of efficiency of said steps of maintaining or serving network objects (column 7 line 65-67 and column 8 line 20-26)

As per claim 31, although Bhide does not specifically state the network objects are recorded on the mass storage, it would have been obvious because mass storage can safely maintain the objects, such as for backup. Therefore, it is an advantage for the network objects are recorded on the mass storage. Accordingly, one of ordinary skill in the art would have realized Bhide would have recorded the network objects on the mass storage.

As per claims 16, 24, 32 and 40, Bhide teaches the step of maintaining includes a step of controlling a measure of latency for HTTP (column 5 line 1-21 and column 7 line 46-63).

As per claims 15-16, 24, 32 and 40, although Bhide does not specifically state the displayed network object is a logical group of network object or an HTML page, It would also have obvious to one of ordinary skill in the art that Bhide's network objects would have included a logical group of network object and an HTML page. This would have been obvious because "network object" is a broad term, Bhide's network objects in the invention are not just limited on a specific type of network object. Therefore, one of ordinary skill in the art would have realized Bhide's network objects would have included a logical group of network objects and an HTML page.

As per claims 17, 25, 33 and 41, Bhide teaches a step of serving said network objects to said information requester in place of said information provider (column 8 line 7-8).

As per claims 18, 26, 34 and 42, Bhide teaches a step of serving said network objects to said information requester in place of said information provider in response to a second request from said information requester (column 8 line 7-20).

As per claims 19, 27, 35 and 43, Bhide teaches the step of receiving uses a computer network (column 5 line 1-9 and Fig. 3).

As per claims 20, 28, 36 and 44, Bhide teaches the step of receiving is responsive to protocol messages using a computer network, said protocol messages including a resource identifier for each said network object (column 5 line 10-29 and column 7 line 53-54 and column 9 line 14-15, 33-34).

As per claims 21, 29. 37 and 45, Bhide teaches the step of serving is responsive to a resource identifier associated with each said network object (column 9 line 14-15, 33-34).

As per claims 22, 30. 38 and 46, Bhide teaches the step of serving is responsive to a uniform resource locator associated with each said network object (column 8 line 50-53).

As per claims 47 and 52-55, Bhide teaches a method, including steps of:

a) receiving a set of network objects in response to a first request to an information provider (the server) from an information requester (the agent or the client) (column 8 line 5-8);

b) maintaining said network objects in a cache memory, said cache memory including mass storage (column 4 line 40-43, 55-57 and column 6 line 27-29 and column 7 line 64-65 and column 8 line 13);

As per claim 47, Bhide further teaches:

c) wherein said step of maintaining is performed by the agent of a file system using said mass storage (column 6 line 5-6 and 49-50).

As per claim 47, although Bhide does not specifically state the maintaining is performed independently, it would have been obvious because the agent performing the maintaining work and is physically separated from the server and the client. Therefore, the agent would work independently. Accordingly, one of ordinary skill in the art would have realized state the step of maintaining is performed independently.

As per claim 52, although Bhide does not specifically state said cache memory includes at least a portion thereof that is non-persistent, it is well know in the art that the cache memory acts as RAM or a non-persistent memory storage when the RAM is too slow for accessing compared to the microprocessor speed. Thus, the cache is accessed to act in place of the RAM. It would have been obvious to one of ordinary skill in the art that the cache would have at least one portion being non-persistent.

As per claim 53, Bhide further teaches:

c) wherein said step of maintaining includes steps of recording said network object and retrieving network objects (or software) from said memory (column 4 line 34-38 and column 7 line 65-67 and column 8 line 20-26)

As per claim 53, although Bhide does not specifically state the network objects are recorded on the mass storage, it would have been obvious because mass storage can safely maintain the objects, such as for backup. Therefore, it is an advantage for the network objects are recorded on the mass storage. Accordingly, one of ordinary skill in the art would have realized Bhide would have recorded the network objects on the mass storage.

As per claim 53, although Bhide does not specifically state recording and retrieving said network objects without having to maintain said network objects persistently, it would have been obvious the system is able to record and retrieve network objects (or software) without having to maintain the network object in ROM. It would have been obvious because it is well know in the art that the cache memory acts as RAM or a non-persistent memory storage when the RAM is too slow for accessing compared to the microprocessor speed. Thus, the cache is accessed to act in place of the RAM. Therefore, It would have been obvious to one of ordinary skill in the art that the system is able to record and retrieve said network objects without having to maintain said network objects persistently.

8. Claims 48-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhide et al., U. S. Patent No. 5,852,717 in view of Axberg et al., U. S. Patent No. 6,009,466.

As per claims 48-51, Bhide teaches a method, including steps of:

a) receiving a set of network objects in response to a first request to an information provider (the server) from an information requester (the agent or the client) (column 8 line 5-8);

b) maintaining said network objects in a cache memory, said cache memory including mass storage (column 4 line 40-43, 54-57 and column 6 line 27-29 and column 7 line 64-65 and column 8 line 13).

As per claims 48-51, Bhide does not teach the step of maintaining includes steps of selecting a group of more than one said network objects to be written/deleted to/from said mass storage collectively, and writing said group of network objects to said mass storage in one or more write episodes.

As per claims 48-51, Axberg teaches a method of selecting a group of more than one network objects, and said objects are also be able to write (save)/delete to/from the mass storage collectively according to the user's instruction (column 5 line 21-23 and column 11 line 1-25 and 54-58 and Fig. 9 and Fig. 12A-12E).

As per claims 48-51, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow Bhide's method to include a function of selecting network objects and write/delete them to/from a mass storage collectively

according to user's instruction as Axberg teaches. This would have been obvious it will allow users only to choose and collect/delete the objects they want. If less objects are selected, it would also accelerate the speed of files transferring, which means a higher efficiency of said procedure is achieved. Therefore, one of ordinary skill in the art would have been motivated to implement Axberg's selecting method to Bhide's maintain network objects procedure.

9. Claims 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhide et al., U. S. Patent No. 5,852,717 in view of Fuller, U. S. Patent No. 5,778,168.

As per claims 54 and 55, Bhide teaches a method, including steps of:

c) receiving a set of network objects in response to a first request to an information provider (the server) from an information requester (the agent or the client) (column 8 line 5-8);

d) maintaining said network objects in a cache memory, said cache memory including mass storage (column 4 line 40-43, 54-57 and column 6 line 27-29 and column 7 line 64-65 and column 8 line 13).

As per claims 54 and 55, Bhide also teaches the system comprises a flash memory (column 4 line 41).

As per claims 54 and 55, although Bhide does not specifically state system is able to maintain the information after loss of power, it would have been obvious the system is able to do so. This would have been obvious because the flash memory is a

nonvolatile memory, and inherently, a nonvolatile memory does not lose data when power is removed. Therefore, one of ordinary skill in the art would have realized Bhide's system is able to maintaining information after loss of power.

As per claims 54 and 55, Bhide does not teach the step of maintaining includes steps of writing (saving)/deleting network objects to/from said mass storage in one or more episodes (instruction), such as the instruction are performed so as to atomically commit changes.

As per claim 54, Fuller teaches a method of atomically writing network object to the mass storage according to the user's instruction (column 1 line 39-44 and column 19 line 52-56).

As per claim 55, although Fuller does not specifically teach atomically deleting network object from the mass storage according to the user's instruction, it would have been obvious Fuller's method includes atomically deleting network object from the mass storage. This would have been obvious because purpose to Fuller's invention is to ensure network objects (data) update properly in the event of system failure (abstract). It would have been obvious to one of ordinary skill in the art to realize the updates would include various operations, such as reading, writing, deleting. Therefore, it would have been obvious to one of ordinary skill in the art to realize Fuller's method would include atomically deleting network object from the mass storage according to the user's instruction.

As per claims 54 and 55, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow Bhide's method to include a function of atomically writing/deleting network objects to/from a mass storage according to user's instruction as Fuller teaches. This would have been obvious it will allow users to overcome writing and deleting operations in the event of system failure. Therefore, one of ordinary skill in the art would have been motivated to implement Fuller's method of atomically writing/deleting network objects to/from a mass storage according to user's instruction to Bhide's maintain network objects procedure.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Wang whose telephone number is (703) 305-0084. The examiner can normally be reached Monday – Thursday from 8:00 AM to 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Palys, can be reached at (703) 305-9685. The fax number for this group is (703) 305-3719.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose number is (703) 305-9618.

Any response to this action should be mailed to:
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or faxed to:
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Hand-delivered responses should be brought Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

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April 5, 2000

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